



NIH258.001DV1

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	Yanagi et al.
Appl. No.	:	09/662,454
Filed	:	September 14, 2000
For	:	CLONED GENOMES OF INFECTIOUS HEPATITIS C VIRUSES AND USES THEREOF
Examiner	:	Marvich, Maria
Group Art Unit	:	1633

SECOND DECLARATION UNDER 37 CFR 1.132 OF ROBERT H. PURCELL, M.D.

I, Robert H. Purcell, M.D., do hereby declare:

1. I am a named inventor of the above-identified application. A true and correct copy of my Curriculum Vitae is attached as Exhibit A.
2. I re-affirm my previously submitted Declaration under 37 CFR 1.132 of Robert H. Purcell, M.D., and incorporate it by reference herein.
3. Listed below is an annotated bibliography that I will discuss.

Yu M-YW, Bartosch B, Zhang P, Guo Z-P, Renzi PM, Shen L-M, Granier C, Feinstone SM, Cosset F-L, Purcell RH. Neutralizing antibodies to hepatitis C virus (HCV) in immune globulins derived from anti-HCV-positive plasma. *PNAS USA* 2004;**101**(20):7705-7710.

Meunier JC, Engle RE, Faulk K, Zhao M, Bartosch B, Alter H, Emerson SU, Cosset FL, Purcell RH, Bukh J. Evidence for cross-genotype neutralization of hepatitis C virus pseudo-particles and enhancement of infectivity by apolipoprotein C1. *PNAS USA* 2005;**102**(12):4560-4565.

Bassett, SE, Guerra B, Brasky K, Miskovsky E, Houghton M, Klimpel GR, Lanford RE. Protective immune response to hepatitis C virus in chimpanzees rechallenged following clearance of primary infection. *Hepatology* 2001;**33**:1479-1487.

Major ME, Mihalik K, Puig M, Rehmann B, Nascimbeni M, Rice CM, Feinstone SM. Previously infected and recovered chimpanzees exhibit rapid responses that control hepatitis C virus replication upon rechallenge. *Journal of Virology* 2002;**76**(13):6586-6595.

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Lanford RE, Guerra B, Chavez D, Bigger C, Brasky KM, Wang XH, Ray SC, Thomas DL. Cross-genotype immunity to hepatitis C virus. *Journal of Virology* 2004;78(3):1575-1581.

Weiner AJ, Paliard X, Selby MJ, Medina-Selby A, Coit D, Nguyen S, Kansopon J, Arian CL, Ng P, Tucker J, Lee CT, Polakos NK, Han J, Wong S, Lu HH, Rosenberg S, Brasky KM, Chien D, Kuo G, Houghton M. Intrahepatic genetic inoculation of hepatitis C virus RNA confers cross-protective immunity. *Journal of Virology* 2001;75(15):7142-7148.

Bukh J, Thimme R, Satterfield WC, Meunier JC, Spangenberg HC, Forns X, Chang KM, Emerson SU, Chisari FV, Purcell RH. Persistence of HCV after homologous monoclonal re-challenge is associated with emergence of virus variants. In Jilbert AR, Grgacic EVL, Vickery K, Burrell CJ, Cossart YE, eds. *Proceedings of the 11th International Symposium on Viral Hepatitis & Liver Disease*. Australian Centre for Hepatitis Virology 2004:375-377.

Yanagi M, Purcell RH, Emerson SU, Bukh J. Hepatitis C virus: An infectious molecular clone of a second major genotype (2a) and lack of viability of intertypic 1a and 2a chimeras. *Virology* 1999;262(1):250-263.

Okamoto H, Mishiro S, Tokita H, Tsuda F, Miyakawa Y, Mayumi M. Superinfection of chimpanzees carrying hepatitis C virus of genotype II/1b with that of genotype III/2a or I/1a. *Hepatology* 1994;20:1131-1136.

Thimme R, Bukh J, Spangenberg HC, Wieland S, Pemberton J, Steiger C, Govindarajan S, Purcell RH, Chisari FV. Viral and immunological determinants of hepatitis C virus clearance, persistence, and disease. *PNAS USA* 2002;99(24):15661-15668.

Major ME, Dahari H, Mihalik K, Puig M, Rice CM, Neumann AU, Feinstone S. Hepatitis C virus kinetics and host responses associated with disease and outcome of infection in chimpanzees. *Hepatology* 2004;39(6):1709-1720.

Bigger CB, Brasky KM, Lanford RE. DNA microarray analysis of chimpanzee liver during acute resolving hepatitis C virus infection. *Journal of Virology* 2001;75(15):7059-7066.

Su A, Pezacki JP, Wodicka L, Brideau AD, Supekova L, Thimme R, Wieland S, Bukh J, Purcell RH, Schultz PG, Chisari FV. Genomic analysis of the host response to hepatitis C virus infection. *PNAS USA* 2002;99(24):15669-15674.

4. The immune system deals with viral infections by means of an immune response that can be divided into adaptive responses and innate responses. The adaptive immune responses include humoral-mediated immunity (production of antibodies), cell-mediated immunity (T-cell responses), and TH1 cell-secretion of IFN γ after activation by antigen. The innate immune responses include the IFN- α/β -induced activation of several mechanisms, NOS-dependent mechanisms, and cell-mediated lysis of infected cells by NK cells.

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5. Hepatitis C virus (HCV) is a major cause of chronic liver disease. The only effective therapy for chronic hepatitis C involves administration of IFN- α , which induces a sustained response in only a minority of treated patients. HCV has a genomic organization similar to that of flaviviruses and has been classified within the same family Flaviviridae. Chimeric flaviviruses are advantageous as vaccines because they have the properties of being attenuated while maintaining their immunogenicity. Globally, six major HCV genotypes (genotypes 1-6) have been identified. Infection with genotype 1 is most prevalent, with genotype 1b accounting for the majority of infections in the U.S., Europe, and Japan. The chimpanzee is the only nonhuman host of HCV and thus represents the best animal model. We recently demonstrated that RNA transcripts of a cDNA clone of HC-J4 (genotype 1b) having chimeric termini and a cDNA clone of HY77 (genotype 1a) were infectious in vivo and generated anti-HCV antibodies.

6. Antibodies to HCV can prevent HCV infection. Yu et al. (2004). HCV infection (especially chronic infection) can stimulate antibodies in humans and chimpanzees and such antibody can neutralize not only homotypic but heterotypic HCV strains. Meunier et al. (2005). Prior infection with polyclonal HCV provides partial protection of chimpanzees against subsequent chronic infection upon reexposure to polyclonal homotypic virus. Bassett et al. (2001). Prior infection of chimpanzees with HCV (including infection with polyclonal virus and transfection with RNA transcripts of monoclonal virus) resulted in an augmented host adaptive immune response and attenuated infections following rechallenge with homotypic monoclonal virus. Major et al. (2002). Prior infection of chimpanzees with polyclonal HCV can provide partial protection (reduced viremia; in some cases, apparent sterilizing immunity), associated with enhanced adaptive immune responses, against subsequent challenge with heterotypic HCV strains. Lanford et al. (2004). Transfection of chimpanzees with RNA transcripts of monoclonal HCV can provide partial protection against subsequent rechallenge with heterotypic HCV strains. Weiner et al. (2001). Repeated (13) exposures to homotypic and heterotypic HCV (by transfection of RNA transcripts or infection with virus) resulted in repeated infection but not hepatitis or chronicity. Bukh et al. (2004). However, the 14th challenge of this chimpanzee resulted in a chronic HCV infection, demonstrating, again, that immunity to HCV is relative, not

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absolute. Id. Transfection of a chimpanzee with RNA transcripts from one genotype of HCV can eradicate an existing acute infection with a different HCV genotype (also initiated by transfection with RNA transcripts). Yanagi et al. (1999). Super-infection of chimpanzees with one genotype of polyclonal HCV can eradicate chronic infection with a different genotype of polyclonal HCV. Okamoto et al. (1994). Laboratory evidence is provided for brisk innate and adaptive immune responses to HCV infection in the chimpanzee model. Thimme et al. (2002). Additional evidence is provided for both innate and adaptive immune responses in the chimpanzee model. Major et al. (2004). Microarray analysis of HCV infection in a chimpanzee demonstrates a global and broad-based innate and adaptive immune response, with many genes up-regulated in response to the infection. Bigger et al. (2001). Expanded microarray analysis of HCV infection in three chimpanzees further demonstrates brisk global innate immune responses in all three chimpanzees and brisk global adaptive immune responses in two of the three (the third was a mutated recombinant HCV strain that was attenuated). Su et al. (2002).

7. Taken together, the data support the notion that the RNA transcripts of the cDNA clone of HC-J4 (genotype 1b) having chimeric termini and the cDNA clone of HY77 (genotype 1a) that were demonstrated to be infectious in vivo and to generate anti-HCV antibodies would inherently induce T-cell responses, would inherently stimulate the IFN response, and some of these antibodies would inherently be neutralizing, and thus the clones are considered as providing a basis for a vaccine to at least protect against chronic HCV infection (versus low-level short-lived infection), not only of individuals who have not been infected but also of those who are already infected. Such a vaccine would be useful. The data also provide evidence to support the concept that such a vaccine in conjunction with antiviral therapies such as IFN- α and/or other immune modulators has considerable promise.

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I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful, false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful, false statements may jeopardize the validity of the application or patent issuing therefrom.

Respectfully submitted,

Dated: Sept. 11, 2006

By: Robert H. Purcell
Robert H. Purcell, M.D.

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CURRICULUM VITAE

Robert H. Purcell, M.D.

Date and Place of Birth: December 19, 1935; Keokuk, Iowa

Social Security Number: 442-36-2449

Citizenship: United States

Address: Office: HVS/LID/NIAID/NIH
Building 50/6523
50 South Drive MSC 8009
Bethesda, MD 20892-8009
(301) 496-5090/496-6227

Education:

1955	A.S. (Chemistry), Eastern Oklahoma A & M Jr. College
1957	B.A. (Chemistry), Oklahoma State University, Stillwater
1960	M.S. (Biochemistry), Baylor University, Waco, Texas
1962	M.D., Duke University, Durham, North Carolina

Brief Chronology of Employment:

1959 - 1960	Student Fellow with Dr. A. Clark Griffin, Baylor University. Studied physico-chemical properties of polyoma virus.
1960 - 1962	Student fellow with Dr. Joseph Beard, Duke University. Collaborated in delineating the amino acid composition and nucleotide sequence of avian myeloblastosis virus
1962-1963	Internship, Pediatrics, Duke Hospital, Durham, North Carolina.
1963 - 1965	Officer, Epidemic Intelligence Service, Communicable Disease Center, Atlanta, Georgia. Assigned to Vaccine Development Branch of NIAID to participate in evaluation of live enteric type 4 adenovirus vaccine.
1965 - 1969	Senior Surgeon, USPHS, Laboratory of Infectious Diseases, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, Maryland.

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1969 - 1972	Medical Officer, (CS), Laboratory of Infectious Diseases, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, Maryland.
1972 - 1996	Medical Director, USPHS, Laboratory of Infectious Diseases, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, Maryland.
1997-9/2001	SBRS, Laboratory of Infectious Diseases, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, Maryland
10/2001-Present	Title 42, Senior Investigator, Laboratory of Infectious Diseases, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, Maryland
1974 - Present	Head, Hepatitis Viruses Section, Laboratory of Infectious Diseases, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, Maryland.
2001- Present	Co-Chief, Laboratory of Infectious Diseases, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, Maryland.
1988 - Present	Adjunct Professor, Department of Microbiology, Georgetown University Medical Center, Rockville, Maryland.
1989 - Present	Adjunct Professor, Department of Immunology and Infectious Diseases, Johns Hopkins University School of Public Health, Baltimore, Maryland.
1990 - Present	Collaborative Scientist (adjunct Professor), Division of Pathobiology and Immunobiology, Yerkes Regional Research Center, Emory University, Atlanta, Georgia.

Societies:

American Epidemiological Society
American Society for Microbiology
American Society for Virology
American Association for Advancement of Science
Society for Epidemiologic Research
Infectious Diseases Society of America
Washington Academy of Sciences
American Society for Clinical Investigation
New York Academy of Sciences

Association of American Physicians
American College of Epidemiology
American Association for the Study of Liver Diseases
International Association for the Study and Prevention of Virus Associated Cancers
International Association of Biological Standardization
International Association for the Study of Liver Diseases
Society for Experimental Biology and Medicine
International AIDS Society
National Academy of Sciences
American Academy of Microbiology
Molecular Medicine Society
American Society of Tropical Medicine and Hygiene

Honors, Awards, and Medals Received:

Elected Fellow, Washington Academy of Sciences, 1972
Recipient, USPHS Superior Service Award, July, 1972.
Recipient, USPHS Meritorious Service Medal May, 1974.
Recipient of Gorgas Medal, Nov., 1977.
Recipient, Distinguished Service Medal, April, 1978.
Recipient, Distinguished Alumni Award, Duke University School of Medicine, Durham, North Carolina, November, 1978.
Recipient, Eppinger Prize, 5th International FALK Symposium on Virus and Liver, Basel, Switzerland, September 29 - October 9, 1979.
Recipient, Squibb Award, Infectious Diseases Society of America, September 1980.
Recipient, Medal of the City of Turin, Italy, June 10, 1983.
Recipient, Gold Medal Award, Canadian Liver Foundation, September 11, 1984.
Recipient, Distinguished Scientist Award, Society for Experimental Biology and Medicine, Washington, DC Chapter, February 19, 1986.
Elected Member National Academy of Sciences, May 1988.
Biographee, Who's Who in America, 1991.
Elected Fellow American Academy of Microbiology, 1992.
Recipient, Eastern Oklahoma State College Alumni Hall of Fame Award, 1996.
Co-recipient, King Faisal International Prize in Medicine, 1998.
Recipient, 1999 Research Science Award of the Hepatitis Foundation International, Washington, D.C., March 28, 1999.
Elected Fellow of the American Association for the Advancement of Science, 1999.
Elected Fellow of the Molecular Medicine Society, 2000.
Recipient, Distinguished Achievement Award, 10th International Symposium on Viral Hepatitis and Liver Disease, Atlanta, GA, April 9-13, 2000.
Recipient, Distinguished Achievement Award, American Society for the Study of Liver Diseases, 2000.

Past/Present Member of Editorial Board and/or Reviewer for the Following Journals:

American Journal of Epidemiology
Gastroenterology
Hepatology

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Infection and Immunity
Journal of Clinical Microbiology
Journal of Clinical Investigation
Journal of Infectious Diseases
Journal of Medical Virology
Journal of the National Cancer Institute
Journal of Virology
Lancet
Nature
Proceedings of the National Academy of Sciences
Science

Past or Present Member of the Following Committees:

- Clinical Research Committee
- Ad hoc Study Group, R&D Command, U.S. Army
- NIH Committee on Utilization of Hepatitis Vaccine.
- WHO Expert Advisory Panel on Virus Diseases.
- Promotion and Tenure Committee, National Institute of Allergy and Infectious Diseases.
- Oversight Committee, Institute of Laboratory Animal Research, National Academy of Sciences.
- Public Health Service Animal Models Committee.
- Occupational Health and Safety Committee, National Institutes of Health.
- FCCSET Working Group on HIV Vaccine Development and International Field Trials, Committee on Life Sciences and Health.
- Flaviviridae Study Group, International Committee on the Taxonomy of Viruses.
- Central Tenure Committee, National Institutes of Health
- NIH Safety Committee
- NIAID Promotion and Tenure Staff Scientist Subcommittee

U.S. Patents:

1. Modification Of Hepatitis B Virus Infection In Chronic Carriers Of HBsAG
Patent #: 4,140,761 (1979)
Inventors: John Gerin, Hilton Levy, Thomas Merigan, Robert H. Purcell, and William Robinson
2. Inactivation Of a Lipid Virus
Patent #: 4,511,556 (1985)
Inventors: Robert H. Purcell, and Stephen M. Feinstone
3. Isolation Of Hepatitis A Virus Strain HM-175
Patent #: 4,532,215 (July 30, 1985)
Inventors: Richard J. Daemer, Stephen M. Feinstone, Ian D. Gust, and Robert H. Purcell
4. Inactivation Of Viruses Containing Essential Lipids

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- Patent #: 4,581,231 (1986)
Inventors: Robert H. Purcell, S.M. Feinstone
5. Utilizing A Halohydrocarbon Containing Dissolved Water To Inactivate A Lipid Virus
Patent #: 4,615,886 (1986)
Inventors: R.H. Purcell, S.M. Feinstone
 6. Hepatitis A Virus Purified And Triply Cloned
Patent #: 4,620,978 (Nov. 4, 1986)
Inventors: Richard Daemer, Stephen Feinstone, Ian Gust, Robert Purcell
 7. Isolation Of Hepatitis A Virus Strain HM-175
Patent # 4,636,469 (Jan. 13, 1987)
Inventors: Richard Daemer, Stephen Feinstone, Ian Gust, Robert Purcell
 8. Vaccine Against Hepatitis A Virus
Patent #: 4,894,228 (1990)
Inventors: Robert H. Purcell, John R. Ticehurst, Jeffrey I. Cohen, Suzanne U. Emerson, Stephen M. Feinstone, Richard J. Daemer, and Ian D. Gust
 9. A Vaccine Against Hepatitis A
Patent #: 5,476,658 (1995)
Inventors: Sergei A. Tsarev, Suzanne U. Emerson, Michael S. Balayan, and Robert H. Purcell
 10. Hepatitis A Vaccine
Patent #: 5,478,746 (Dec. 26, 1995)
Inventors: Jeffery I. Cohen, Robert H. Purcell, Stephen M. Feinstone, and John R. Ticehurst
 11. Nucleotide And Deduced Amino Acid Sequences Of The Envelope 1 Gene Of 51 Isolates Of Hepatitis C Virus And The Use Of Reagents Derived From These Sequences In Diagnostic Methods And Vaccines
Patent #: 5,514,539 (May 7, 1996)
Inventors: Jens Bukh, Roger H. Miller, Robert H. Purcell
 12. Production of Complementary DNA Representing Hepatitis A Viral Sequences by Recombinant DNA Methods and Uses Therefor
Patent #: 5,516,630 (1996)
Inventors: John R. Ticehurst, David Baltimore, Stephen Feinstone, Robert Purcell, Vincent R. Racaniello, Bahige Baroudy, Suzanne U. Emerson
 13. African Green Monkey Kidney Cell Line Useful For Maintaining Viruses And For Preparation Of Viral Vaccines
Patent #: 5,646,033 (July 8, 1997)
Inventors: L. Potash, R.M. Chanock, R. H. Purcell, A.Z. Kapikian
 14. Hepatitis A Vaccine
Patent #: 5,837,260 (Nov. 17, 1998)
Inventors: Jeffery I. Cohen, Robert H. Purcell, Stephen M. Feinstone, and John R. Ticehurst

15. Production Of Complementary DNA Representing Hepatitis A Viral Sequences By Recombinant DNA Methods And Uses Therefor
Patent #: 5,849,562 (Dec. 15, 1998)
Inventors: R.H. Purcell, S.U. Emerson
16. Method Of Producing A Virus Vaccine From An African Green Monkey Kidney Cell Line
Patent #: 5,911,998 (June 15, 1999)
Inventors: L. Potash, R.M. Chanock, R.H. Purcell, A.Z. Kapikian
17. Nucleotide And Deduced Amino Acid Sequences Of The Envelope 1 Gene Of 51 Isolates Of Hepatitis C Virus And The Use Of Reagents Derived From These Sequences In Diagnostic Methods And Vaccines
Patent #: 5,871,962 (Feb. 16, 1999)
Inventors: Jens Bukh, Roger H. Miller, Robert H. Purcell
18. Hepatitis C Virus (HCV) Core Gene Nucleotide Sequences And Related Methods Of Detecting Major And Minor Genotypes of HCV Isolates
Patent #: 5,882,852 (Mar. 16, 1999)
Inventors: Jens Bukh, Roger H. Miller, Robert H. Purcell
19. Method for Producing a Virus From an African Green Monkey Kidney Cell Line
Patent #: 6,025,182 (Feb. 15, 2000)
Inventors: L. Potash, R.M. Chanock, R.H. Purcell, A.Z. Kapikian
20. Recombinant Proteins of a Pakistani Strain of Hepatitis E And Their Use In Diagnostic Methods And Viruses
Patent #: 6,054,567 (Apr. 25, 2000)
Inventors: Suzanne U. Emerson, Robert H. Purcell, Sergei A Tsarev, R.A. Robinson
21. Nucleotide And Deduced Amino Acid Sequences Of Hypervariable Region 1 Of The Envelope 2 Gene Of Isolates Of Hepatitis C Virus And The Use Of Reagents Derived From These Hypervariable Sequences In Diagnostic Methods And Vaccines
Patent #: 6,110,465 (Aug. 29, 2000)
Inventors: Jens Bukh, Roger H. Miller, Robert H. Purcell
22. Method for Producing an Adapted Virus Population From an African Green Monkey Kidney Cell Line
Patent #: 6,117,667 (Sept. 12, 2000)
Inventors: L. Potash, R.M. Chanock, R.H. Purcell, A.Z. Kapikian
23. Human/Simian Chimeric Hepatitis A Virus Vaccine
Patent #: 6,146,643 (Nov. 14, 2000)
Inventors: Sergei A. Tsarev, Suzanne U. Emerson, Robert H. Purcell
23. Cloned Genomes of Infectious Hepatitis C Viruses And Uses Thereof
Patent #: 6,153,421 (Nov. 28, 2000)
Inventors: M. Yanagi, J. Bukh, S.U. Emerson, R.H. Purcell

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24. Methods For Detecting Antibodies to HAV 3C Proteinase
Patent #: 6,156,499 (Dec. 5, 2000)
Inventors: Deneen Stewart, Tina S. Morris, Robert H. Purcell, Suzanne U. Emerson
25. Attenuated Hepatitis A Virus Vaccine Which Grows in MRC-5 Cells
Patent #: 6,180,110 B1 (Jan. 30, 2001)
Inventors: Ann W. Funkhouser, Suzanne U. Emerson, Robert H. Purcell, Eric D'Hondt
26. Recombinant Proteins of a Pakistani Strain of Hepatitis E and Their Use in Diagnostic Methods and Vaccines
Patent No. 6,207,416 (Mar. 27, 2001)
Inventors: Sergei A. Tsarev, Suzanne U. Emerson, Robert H. Purcell
27. Simian-Human HAV Having A Chimeric 2C Protein
Patent No. 6,280,734 (Aug. 28, 2001)
Inventors: G. Raychaudhuri, S.U. Emerson, R.H. Purcell
28. Recombinant Proteins of a Pakistani Strain of Hepatitis E and Their Use in Diagnostic Methods and Vaccines
Patent No. 6,287,759 (Sept. 11, 2001)
Inventors: Sergei A. Tsarev, Suzanne U. Emerson, Robert H. Purcell
29. Vaccine Against Hepatitis A Virus
Patent #: RE37,381 (Sept. 18, 2001) of 4,894,228 (1990)
Inventors: Robert H. Purcell, John R. Ticehurst, Jeffrey I. Cohen, Suzanne U. Emerson, Stephen M. Feinstone, Richard J. Daemer, and Ian D. Gust
30. Nucleotide And Deduced Amino Acid Sequences Of The Envelope 1 Gene Of 51 Isolates Of Hepatitis C Virus And The Use Of Reagents Derived From These Sequences In Diagnostic Methods And Vaccines
Patent #: 6,572,864 (June 3, 2003)
Inventors: Jens Bukh, Roger H. Miller, Robert H. Purcell
31. Vaccine Against Hepatitis A Virus
Patent #: RE37,381 (Sept. 18, 2001) of 4,894,228 (1990)
Inventors: Robert H. Purcell, John R. Ticehurst, Jeffrey I. Cohen, Suzanne U. Emerson, Stephen M. Feinstone, Richard J. Daemer, and Ian D. Gust
32. Hepatitis A Virus Vaccines
Patent #: 6,423,318 b1 (July 23, 2002)
Inventors: Ann W. Funkhouser, Suzanne U. Emerson, Robert H. Purcell, Eric D'Hondt
33. A Swine Hepatitis E Virus and Uses Thereof
Patent #: 6,432,408 B1 (Aug. 13, 2002)
Inventors: X-J Meng, S.U. Emerson, R.H. Purcell

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34. Recombinant Proteins of a Pakistani Strain of Hepatitis E and Their Use in Diagnostic Methods and Vaccines
Patent #: US 6,458,562 B1 (Oct. 1, 2002)
Inventors: S.U. Emerson, R.H. Purcell, S.A. Tsarev, R.A. Robinson
35. Nucleotide And Deduced Amino Acid Sequences Of The Envelope 1 Gene Of 51 Isolates Of Hepatitis C Virus And The Use Of Reagents Derived From These Sequences In Diagnostic Methods And Vaccines
Patent #: 6,572,864 (June 3, 2003)
Inventors: J. Bukh, R.H. Miller, R.H. Purcell
36. Hepatitis A Virus Vaccines
Patent #: 6,680,060 B2 (Jan. 20, 2004)
Inventors: A.W. Funkhouser, S.U. Emerson, R.H. Purcell, E. D'Hondt
37. Recombinant Proteins of a Pakistani Strain of Hepatitis E and Their Use In Diagnostic Methods and Vaccines
Patent #: 6,696,242 (Feb. 24, 2004)
Inventors: S.A. Tsarev, S.U. Emerson, R.H. Purcell
38. Recombinant Proteins of a Pakistani Strain of Hepatitis E and Their Use In Diagnostic Methods and Vaccines
Patent #: USP 6,706,873 (Mar. 16, 2004)
Inventors: S.A. Tsarev, S.U. Emerson, R.H. Purcell

U.S. Patent Applications and Continuations-in-part: >75

Special Scientific Recognition:

Invited Participant, Contributor, Symposium, "What's New in Infectious Diseases," Jefferson Medical College, 1966. Proceedings published in Medical Clinics of North America.

Temporary Advisor to World Health Organization on Mycoplasma nomenclature and classification, Geneva, October, 1967.

Invited Speaker, Third Nuffield Conference of Rheumatism, Ditchley Park, Oxfordshire, England, April 11-12, 1967. Paper presented: "Mycoplasmas and Rheumatoid Arthritis" by RH Purcell, JL Decker, and RM Chanock.

Invited Participant, WHO mycoplasma Meeting, Geneva, October, 1967.

Invited Participant, Symposium on Pediatric Respiratory Diseases for Twelfth International Congress of Pediatrics, Mexico City, December 1-7, 1968. Presented paper on the role of mycoplasmas in human disease.

Invited Speaker, Third International Symposium on Medical and Applied Virology, Fort Lauderdale, Florida, December 14-17, 1969.

1970

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Invited Participant, American Academy of Pediatrics Spring Meeting, Washington, DC, April 13-15, 1970.

Invited Speaker, WHO Mycoplasma Meeting, Geneva, May 7, 1970.

Invited Speaker, WHO Viral Hepatitis Meeting, Geneva, May 4-6, 1970.

Invited Speaker, Colloquium of the International Society of Blood Transfusion, Munich, Germany, August, 1970.

1971

Invited Participant, International Seminar on Viral Hepatitis, International Children's Centre, Paris, June 14-16, 1971.

Invited Participant, Meetings of the Surgeon General's Subcommittee on Liver Disease, at Presbyterian St. Luke's Hospital, Chicago, Illinois, October, 1969 and November, 1971. Presented papers at both on Australia Antigen Studies.

Invited Participant, Panel Discussion on Australia-Antigen-Positive Hepatitis at Meeting of the American Association of the Study of Liver Disease November 3-4, 1971, Chicago, Illinois.

1972

Invited Participant, Ninth International Gastroenterology Congress, Paris, July, 1972.

Invited Participant, Symposium on Infectious Diseases, University of Vermont, October 20, 1972.

Invited Speaker, U.S. - Japan Viral Disease Working Conference, Sapporo, Japan, September 18-20, 1972.

Invited Participant, WHO Scientific Group on Viral Hepatitis. Geneva, September 25-30, 1972.

Invited Participant, American Association for the Study of Liver Disease, Chicago, November, 1972.

1973

Invited Participant, Ecological Investigations Program Seminar, Phoenix, Arizona, January 15-16, 1973.

Invited Participant, OPS Management Conference with the Secretary NIH, October 27, 1972.

Invited Speaker, U.S. Japan Cooperative Medical Sciences Program, Third Revised Program for Workshop on Recent Advances in Epidemiology and Pathogenesis of Viral Diseases, NIH, July 23-27, 1973.

1974

Invited Speaker, Gustav Stern Symposium, "Perspectives in Virology IX," New York, NY, February 4 & 5, 1974.

Invited Speaker, ILN UCLA Squaw Valley Symposia, Squaw Valley, California, March 24-29, 1974.

Invited Speaker, 5th World Congress of Gastroenterology, Hepatitis Symposium, Mexico City, Mexico, October 13-19, 1974.

Invited Speaker, Hepatitis B Symposium, Melbourne, Australia, May 2-3, 1974.

Invited Speaker, Sixth Annual Red Cross Scientific Symposium, May 8, 1974.

Invited Speaker, American Society for Microbiology meeting, May 6-10, 1974, Chicago, Illinois.

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Invited Speaker, Faculty Seminar at the University of Texas Health Science Center, Dallas, Texas, November 6, 1974.

Invited Speaker, Infectious Diseases Society of America, San Francisco, California, September 9-10, 1974.

1975

Participant, Workshop on Viral Immunology and Immunopathology, April, 1975.

Co-chairman, Workshop on Viral Hepatitis, International Congress of Virology, Madrid, Spain, September 1975.

Invited Speaker, 3rd International Congress for Virology, Madrid, Spain, September 10-17, 1975.

McLaughlin Visiting Professor at the University of Texas Medical Branch, August, 1975.

Invited Speaker, Symposium on Viral Hepatitis, Society of Medical Consultants to the Armed Forces, December, 1975.

1976

Invited Speaker, Postgraduate Continuation Course on "Gastroenterology for Clinicians-1976," Phoenix, Arizona, March 18-20, 1976.

Invited Participant, Panel Discussion on "Viral Hepatitis Update" at the 57th Annual Meeting of the American College of Physicians, Philadelphia, PA, April 5-8, 1976.

Invited Speaker, 1976 Summit Meeting of the Oklahoma State Medical Association, May 8, 1976, Oklahoma City, Oklahoma.

Invited Speaker, Massachusetts General Hospital and the Massachusetts Eye and Ear Infirmary, Boston Massachusetts, September 30, 1976.

Invited Participant, WHO Expert Committee Meeting on Viral Hepatitis, Oct. 11-16, 1976.

Invited Participant, First Joint Soviet-American Symposium on Problem Area 6 - Blood Transfusion, Soviet Union, October 18-20, 1976.

Invited Participant, AASLD Postgraduate Course on Viral Hepatitis Research Foundation, Tokyo, Japan, November 6-21, 1976.

Participant, Virology Task Force Meeting, November 29-30, 1976.

1977

Invited Speaker, Ohio State University and Children's Hospital, Columbus, Ohio, January 19-20, 1977.

Invited Speaker, Canadian Society for Clinical Investigation, University of Toronto, Toronto, Canada, January 26, 1977.

Invited Speaker, Conference on "Marmosets in Experimental Medicine," Oak Ridge, Tennessee, March 16-18, 1977.

Invited Participant, Third International Congress of Immunology, Sydney, Australia, July 3-8, 1977.

Invited Participant, 5th Scandinavian Virus Symposium, Sweden, August 30 - September 3, 1977.

Invited Participant, International Symposium, Viral and Bacterial Vaccines, Copenhagen, September 7-8, 1977.

Invited Participant, "Clinical Day": New Frontiers in Hepatitis, Montreal, Canada, October 19, 1977.

8/14/06

Invited Speaker, American Society of Clinical Pathology, Las Vegas, October 26, 1977.

Invited Speaker, American Association for the Study of Liver Diseases, Chicago, Illinois, November 1-2, 1977.

Participant, International Workshop on Hepatitis B and Liver Cancer, National Cancer Institute, Bethesda, Maryland, December, 1977.

1978

Invited Participant, Workshop on Research in Digestive Diseases. National Commission on Digestive Diseases, January 16-17, 1978.

Invited Speaker, ICN-UCLA Symposium on Persistent Viruses, Keystone, Colorado, March 13-17, 1978.

Invited Speaker, Second U.C.S.F. Symposium on Viral Hepatitis, San Francisco, California, March 16-19, 1978.

Invited Speaker, American College of Physician's Course, Mayo Clinic, Rochester, Minnesota, March 29-31, 1978.

Invited Participant, "Task Force on Use and Needs for Chimpanzees," NIH, Bethesda, Maryland, May 22, 1978.

Invited Participant and Co-chairman, US-Japan, Program Symposium on Viral Hepatitis, Tokyo, Japan, July 17-19, 1978.

Invited Participant, Symposium on Viral Hepatitis, Taipei, Taiwan, July 24-26, 1978.

Invited Speaker, Annual Meeting of the Infectious Diseases Society of America, Atlanta, Georgia, October 5-6, 1978.

Invited Speaker, 16th Annual Briefing on "New Horizons of Science," Council for the Advancement of Science Writing, Gatlinburg, Tennessee, November 13-17, 1978.

1979

Visiting Professor, Michigan State University School of Medicine, East Lansing, Michigan, January 30, 1979.

Invited Speaker, "Update-Hepatitis," Sponsored by The New York Academy of Gastroenterology, New York City, February 26, 1979.

Invited Consultant, World Health Organization Consultation on Hepatitis B Vaccines, Geneva, Switzerland, March 12-14, 1979.

Invited Participant, International Symposium on Viral Hepatitis, Munich, West Germany, April 5-6, 1979.

Invited Speaker, Symposium on Frontiers of Science and the Liver, 5th International FALK Symposium on Virus and Liver, Basel, Switzerland, September 29 - October 9, 1979.

1980

Invited Speaker, Stern Symposium, the Eleventh Symposium on Perspectives in Virology. New York City, New York, February 3-5, 1980.

Expert Consultant in hepatitis, U.S. - China Bilateral Science Agreement. Beijing and Shanghai, China. February 28 - March 10, 1980.

Participant, First U.S.-Japan Symposium on Viral Hepatitis, New York City, New York, March 24-25, 1980.

8/14/06

Visiting Professor and Noble Wiley Jones Lecturer, University of Oregon Medical School, Portland, Oregon, April 28-30, 1980.
Invited Speaker, 1980 Medical Alumni Weekend Program, Tufts University, Boston, Massachusetts, May 1-2, 1980.
Invited Faculty Member, Digestive Diseases Update, American Gastroenterology Association annual meeting, Salt Lake City, Utah, May 18, 1980.
Howard B. Tickton Memorial Lecturer, George Washington University Medical School, Washington, DC, May 24, 1980.
Invited Speaker and Workshop Chairman, International Symposium on Non-A, Non-B hepatitis, Vienna, Austria, June 16-18, 1980.
Invited Speaker, Texas Society of Infectious Diseases, New Orleans, Louisiana, September, 1980.
Invited Participant, International Workshop on Infectious Hepatitis, Athens, Greece, November, 1980.
Invited Speaker, Symposium on Viral Hepatitis, U.S.-Japan Bilateral Science Agreement, Hakone, Japan, November, 1980.
Invited Speaker, Chicago Gastroenterological Society, Institute of Medicine of Chicago, Combined Meeting, Chicago, Ill., December, 1980.

1981

Invited Speaker, Pan American Health Organization, Washington, D.C., January, 1981.
Invited Speaker, Johns Hopkins School of Public Health, February, 1981.
Invited Participant and Member, Organizing Committee, International Symposium on Viral Hepatitis, New York, New York, March, 1981.
Invited Participant, Post-graduate training course "Hepatitis Update," New York City, New York, April, 1981.
Invited Speaker, American Academy of Pediatrics, Washington, D.C. April, 1981.
Invited Speaker, 40th Anniversary Symposium, Irwin Memorial Blood Center, June, 1981.
Invited Speaker, Symposium on Hepatitis B Virus sponsored by the Government of Taipei, Taiwan, November 9-11, 1981.

1982

Invited Participant, Workshop on Hepatitis A Virus, Walter Reed Army Institute of Research, Washington, DC, March 5, 1982.
Invited Speaker, Third US-Japan Joint Hepatitis Panel Conference, Washington, DC, March 22-23, 1982.
Visiting Professor, Southwestern Medical School, Dallas, Texas, March 31-April 1, 1982.
Invited Speaker, Annual Meeting of Association of Teachers of Preventive Medicine, Bethesda, MD, April 22, 1982.
Invited Participant, Workshop on Hepatitis B Virus and Hepatocellular Carcinoma, Bethesda, MD, May 3-4, 1982.
Invited Participant, World Health Organization Committee on Viral Hepatitis, Munich, West Germany, May 25-28, 1982.
Invited Speaker, Mini Symposium on Virus B Hepatitis, Washington, D.C., September 10, 1982.
Invited Speaker, Second International Max V. Pettenkofer Symposium on Viral Hepatitis. Munich, West Germany, October 19-22, 1982.

8/14/06

Invited Speaker, Annual Meeting of the American Association for the Study of Liver Diseases, Chicago, Illinois, November 2-3, 1982.
Invited Speaker, American Association of Zoological Veterinarians, New Orleans, Louisiana, November 9, 1982.
Invited Speaker, Scientific Symposium of the American Association of Blood Banks, Anaheim, California, November 10, 1982.
Invited Speaker, Second International IABS Symposium on Viral Hepatitis, Athens, Greece, November 15-18, 1982.
Invited Speaker, Grand Rounds, Washington Hospital Center, Washington, DC, December 14, 1982.

1983

Invited Speaker, Uniformed Services University School of Medicine, Bethesda, Maryland, February 7, 1983.
Invited Speaker, Johns Hopkins School of Public Health, Baltimore, Maryland, February 11, 1983.
Invited Speaker and Delegation Member, Symposium on Viral Hepatitis, U.S.-Japan Bilateral Science Agreement, Kyoto, Japan, March 9-10, 1983.
Invited Speaker and Workshop Organizer, U.S.-India Bilateral Science Agreement, Pune, India, March 14-18, 1983.
Lecturer, course in Virology, FAES, NIH, Bethesda, Maryland, May 2, 1983.
Invited Speaker, seminar on hepatitis vaccines, Office of Biologics, FDA, Bethesda, Maryland, May 16, 1983.
Invited Speaker, International Symposium on Viral Hepatitis, Turin, Italy, June 10-11, 1983.
Invited Speaker, Eighth International Congress of Cytology, Montreal, Canada, June 19-23, 1983.
Invited Speaker, Cold Spring Harbor Symposium on Modern Approaches to Vaccines, Cold Harbor, NY, August 31-September 4, 1983.
Invited Speaker, Hepatology 1983: International Symposium on the Occasion of the 80th Birthday of Hans Popper, Vienna, Austria, October 13-14, 1983.
Invited Speaker, Ninth Annual Symposium for Clinicians on Hospital Infection Control, University of Virginia School of Medicine, Charlottesville, Virginia, November 18, 1983.
Lecturer, Virology Class, FAES, NIH, Bethesda, Maryland, November 28, 1983.
Invited Participant and Consultant, Informal Consultation on Hepatitis B Vaccine Geneva, Switzerland, December 6-8, 1983.
NIH Representative, Consultation on Hepatitis B Vaccine, U.S.-China Bilateral Science Agreement, Beijing and Shanghai, China, December 12-17, 1983.

1984

Invited Speaker, Johns Hopkins School of Public Health, Baltimore, Maryland, February 8, 1984.
Invited Participant and Consultant, World Health Organization Informal Consultation on Hepatitis A Virus, Geneva, Switzerland, February 13-14, 1984.
Invited Speaker, Fourth International symposium on Viral Hepatitis, San Francisco, California, March 8-10, 1984.
Invited Speaker, Symposium on New Approaches to Control of Viral Infections, Bethesda, Maryland, June 4-5, 1984.

8/14/06

Invited Speaker, Symposium on New Hepatitis B Vaccines and Clinical Studies Needed for Licensure, Bethesda, Maryland, June 7, 1984.
Invited Participant, Five-year Review of Hepatitis Panel, U.S.-Japan Bilateral Science Agreement, Tokyo, Japan, July 16-19, 1984.
Invited Participant and Session Chairman, Sixth International Congress of Virology, Sendai, Japan, September 1-7, 1984.
Invited Speaker, Annual Meeting of the Canadian Society for Clinical Investigation, Canadian Association of Gastroenterology and Royal College of Physicians of Canada, September 1984.
Invited Speaker, Symposium on Modern Approaches to Vaccines, Cold Spring Harbor, New York, September 12-16, 1984.
Invited Speaker, Annual Meeting, The Royal College of Pathologists of Australasia, Perth, Australia, October 15-19, 1984.
Invited Speaker, 1984 Annual Forbes Oration, Fairfield Hospital, Melbourne, Australia, October 23, 1984.
Invited Speaker, National Cancer Institute Workshop on AIDS, Bethesda, Maryland, December 10-11, 1984.

1985

Invited Participant, Annual Meeting U.S.-Japan Bilateral Science Agreement, Viral Hepatitis Panel, Oiso, Japan, March 11-12, 1985.
Invited Consultant, Review of National Hepatitis Control Program, Taipei, Formosa, March 14-15, 1985.
Invited Participant, PAHO Ad Hoc Committee Meeting on Viral Hepatitis, Rio de Janeiro, Brazil, May 13-17, 1985.
Invited Participant, Meeting of Scientific Session of Steering Committee of the WHO Hepatitis A Vaccine Development Programme, Bergen, Norway, May 21, 1985.
Invited Participant, 9th Scandinavian Virus Symposium, Bergen, Norway, May 20-22, 1985.
Invited Participant, WHO Steering Committee on Hepatitis, Geneva, Switzerland, July 1-2, 1985.
Invited Participant, WHO Scientific Group on Non-A, Non-B Hepatitis, Delta Antigen-Associated Hepatitis and Blood-borne Human Retroviruses, Tokyo, Japan, October 4-6, 1985.
Invited Participant, American Association for the Study of Liver Diseases, Chicago, Illinois, November 5-6, 1985.

1986

Invited Participant, International Symposium on Liver Cancer and Hepatitis, Shanghai, China, January 15-17, 1986.
Co-organizer and Participant, Joint US-Japan Program Hepatitis Conference, Williamsburg, VA, March 7-8, 1986.
Invited Speaker, 1986 Annual Meeting of American Society for Microbiology, Washington, DC, March 23-28, 1986.
Invited Participant, Symposium on Positive Strand RNA Viruses, Keystone, Colorado, April 20-26, 1986.
Co-organizer and Participant, International Symposium on the Hepatitis Delta Virus (HDV) and its Infection, St. Vincent, Aosta, Italy, June 19-20, 1986.

8/14/06

Participant and Member of Committee Meeting of WHO Steering Committee on Hepatitis A and Polio Vaccines, London England, June 30, 1986.
Invited Speaker, IXth International Congress of Infectious and Parasitic Diseases, Munich, West Germany, July 20-26, 1986.
Invited Participant, WHO Viral Hepatitis Control Program, Munich, West Germany, July 25-26, 1986.
Invited Participant, NIAID AIDS Vaccine Workshop, Bethesda, MD, July 28-29, 1986.
Invited Speaker, Annual Meeting of the American Association for the Study of Live Diseases, Chicago, IL, November 2-5, 1986.
Co-organizer and Participant. Workshop on Epidemic Non-A, Non-B Hepatitis, Bethesda, MD, November 19-20, 1986.
Invited Speaker, Symposium on Progress in Vaccinology, New Delhi, India, December 1-5, 1986.

1987

Invited Speaker, Hepatitis Workshop, Palmas Del Mar, San Juan, Puerto Rico, January 28-30, 1987.
Invited Speaker, Symposia on Hepatitis B Virus and AIDS Viruses, Keystone, CO, Mar. 30-April 4, 1987.
Invited Speaker, The Hans Popper Lecture Symposium on Current Concepts in Liver Pathology, Columbia University College of Physicians and Surgeons, New York, NY, April 30-May 1, 1987.
Member Organizing Committee and Invited Speaker International Symposium on Viral Hepatitis, London, England, May 25-28, 1987.
Invited Participant and Member of Committee, WHO Steering Committee on Hepatitis A and Polio Vaccines, London, England, May 29-30, 1987.
Invited Speaker, Workshop on Hepadnavirus Animal Models, Bethesda, MD, September 21-22, 1987.
Invited Speaker, Symposium on Australia Antigen and AIDS. Castro-Caro, Italy, September 29-30, 1987.
Invited Speaker, Third annual Conference on Military Medicine, Bethesda, MD, October 26-27, 1987.
Invited Participant, Technical Advisory Group, Geneva, Switzerland, November 2-5, 1987.
Invited Speaker, Scientific meeting on Control of Hepatitis B Infections in Infants and Children, Whakatane, N.Z., November 12-13, 1987.
Invited Speaker, Symposium on Control of hepatitis B, Hamilton, N.Z., November 17, 1987.

1988

Invited Speaker, Wallace Rowe Fourth Annual NIAID Symposium, Bethesda, MD, February 1-2, 1988.
Invited Speaker and Member of Panel, U.S.-Japan Bilateral Science Agreement, Panel on Hepatitis, LaJolla, CA, March 16-17, 1988.
Invited Participant, Symposium on Transfusion Associated Infections and Immune Response, March 20-22, 1988.
Invited Speaker and Member of Advisory Group, Stanford Medical School, Palo Alto, CA, March 23, 1988.

8/14/06

Invited Speaker, Grand Rounds, NIH, Bethesda, MD, March 30, 1988.
Invited Speaker, Grand Rounds, NIH, Bethesda, MD, June 1, 1988.
Invited Participant, USPHS meeting on AIDS, Charlottesville, VA, June 2-3, 1988.
Invited Participant, Symposium on Liver Cell Cancer, Freiburg, Germany, June 5-8, 1988.
Invited Speaker, XX Congress of the International Society of Blood Transfusion, London, England, July 10-15, 1988.
Invited Speaker, Satellite Symposium on Hepatitis Non-A, Non-B, International Association for the Study of the Liver, Toronto, Canada, November 1, 1988.
Invited Speaker, Lecture Series on "Molecular Strategies in Vaccine Development," University of Cincinnati College of Medicine, Cincinnati, Ohio, November 15, 1988.
Invited Speaker and Participant, Workshop on Hepatitis, World Health Organization, London, England, December 1-3, 1988.
Invited Speaker, II International symposium on Viral Hepatitis and Hepatocellular Carcinoma, Taipei, Taiwan, December 7-9, 1988.

1989

Invited Speaker, International Workshop on Pathogenesis and Prevention of Hepatocellular Carcinoma, Oahu, Hawaii, February 13-15, 1989.
Invited Speaker and Member of Panel, U.S.-Japan Bilateral Science Agreement, Panel on Hepatitis, Gotembe, Japan, March 16-17, 1989.
Invited Speaker, Congressional hearings on Non-AIDS Medical Research, Hepatitis Panel, Washington, DC, April 5, 1989.
Invited Speaker, Postgraduate Course: "Frontiers in Gastroenterology and Hepatology," American Gastroenterological Association, Washington, DC, May 13-14, 1989.
Invited Speaker, International Symposium on Molecular Biology of HBV and NANB Virus, Kanazawa, Japan, June 1, 1989.
Invited Lecturer, Hepatitis C Virus, Queen Mary Hospital, Hong Kong, June 2, 1989.
Invited Participant, International Symposium on Non-A, Non-B Hepatitis, Tokyo, Japan, September 28-29, 1989.
Co-organizer and Participant, International Symposium on Delta Hepatitis, Washington, DC, October 26-28, 1989.
Invited Lecturer on hepatitis viruses, University of Maryland School of Medicine, Baltimore, MD, November 6, 1989.
Invited Speaker, Hepatitis C Virus, Columbia University School of Medicine, New York, NY, November 8, 1989.
Co-organizer and Participant, NIAID/CDC Workshop in Hepatitis A Virus Vaccines, Washington, DC, November 13-15, 1989.

1990

Invited Participant, Hawaii International Symposium on Hepatitis B, Honolulu, HI, January 11, 12, 1990.
Invited Participant, Symposium on Hepatitis C Virus, Abbott Laboratories, North Chicago, IL, February 8, 9, 1990.
Invited Speaker, Hepatitis Viruses, Johns Hopkins School of Public Health, Baltimore, MD, February 14, 16, 1990.

8/14/06

Invited Speaker, Hepatitis C Virus, Yale University School of Medicine, New Haven, CT, February 27, 1990.

Invited Speaker, "Primate models for viral hepatitis." 1990 UCLA Colloquium on Animal Models of Human Viral Diseases, March 31 - April 6, 1990, Keystone, CO.

Co-organizer and Speaker, 1990 International Symposium on Viral Hepatitis and Liver Disease, Houston, TX, April 5-8, 1990.

Invited Speaker, "Hepatitis Viruses: potential for control." Conference on Controversies in Infectious Diseases, Palm Springs, CA, May 3-5, 1990.

Panel Member and Speaker, US-Japan Bilateral Science Agreement, Panel on Hepatitis, Tokyo, Japan, July 16, 17, 1990.

Organizer and Chairman, Workshop on HBV and HDV, VIIIth International Congress of Virology, Berlin, West Germany, August 26-31, 1990.

Invited Speaker, International Symposium on Hepatitis Viruses, Rostov, USSR, September 4-7, 1990.

Co-organizer and Speaker, NIAID/NCI/NIDDK Symposium on Hepatocellular Carcinoma in North America, Bethesda, MD, September 26, 27, 1990.

Invited Chairman and Speaker, Symposium on Hepatitis C Virus, Laboratory Centre for Disease Control, Toronto, Canada, October 1-2, 1990.

Invited Speaker, International Symposium on Viral Hepatitis, Genoa, Italy, October 26-27, 1990.

Invited Speaker, Second International Symposium on Hepatitis C Virus, Los Angeles, CA, November 8-9, 1990.

Invited Speaker, Hepatitis Viruses, University of Maryland School of Medicine, November 13, 1990.

Invited Speaker, Sixth Maurice Hilleman Lecture, Children's Hospital, Philadelphia, PA, November 21, 1990.

Invited Speaker, 3rd Annual Scientific Meeting of the Hong Kong Association for the Study of Liver Diseases, Hong Kong, December 7-9, 1990.

1991

Invited Speaker, Hepatitis Viruses, Uniformed Services University of the Health Science, Bethesda, MD, January 23, 1991.

Invited Speaker, Hepatitis C, Walter Reed Army Medical Center, Washington, DC, January 31, 1991.

Invited Speaker, Hepatitis Viruses, Parts 1 and 2, The Johns Hopkins University School of Hygiene and Public Health, Baltimore, MD, February 22 and 25, 1991.

Invited Speaker, Hepatitis C and E Viruses, Wallace P. Rowe Seventh Annual Symposium on Animal Virology, Bethesda, MD, February 4, 1991.

Invited Speaker, Hepatitis C, Current Concepts, Albert Einstein College of Medicine, New York City, NY.

Co-organizer and Speaker, Viral Heterogeneity, Congress on Genetic Heterogeneity of Hepatitis Viruses: Clinical Implications, Sestriere, Italy, April 5-7, 1991.

Co-organizer and Chairman, US-Japan Cooperative Medical Science Program, Annual Meeting of the Hepatitis Panels, New York City, NY, May 16-17, 1991.

Recipient, Award for Achievement in Hepatitis Research, and Invited Speaker, "Hepatitis in the 1990s," 10th Anniversary Celebration of Japan Liver Research Foundation, Tokyo, Japan, May 20, 1991.

8/14/06

Invited Participant, The U.S.-Japan Cooperative Medical Science Program, Bethesda, MD, July 22-26, 1991.
Invited Speaker, Fourth Annual Hyman J. Zimmerman Lecture, Hepatic Pathology Course sponsored by the Armed Forces Institute of Pathology, Bethesda, MD, September 4-6, 1991.
Invited Speaker, Symposium on Chimpanzee Conservation and Public Health, Diagon/Bioqual, Inc., Gaithersburg, MD, November 15-16, 1991.
Invited Speaker, The Third International Symposium on Viral Hepatitis and Hepatocellular Carcinoma, Taipei, Taiwan, December 5-8, 1991.
Invited Speaker, International Symposium on Hepatology, Kowloon, Hong Kong, December 13-15, 1991.

1992

Invited Presenter, International Symposium on Active Immunization Against Hepatitis A, Vienna, Austria, January 27-29, 1992.
Invited Speaker, Walter Reed Gastroenterology Symposium, Bethesda, MD, April 3-4, 1992.
Organizer and Speaker (Annual Meeting), and Chairman, U.S. Delegation of the Hepatitis Panel, U.S.-Japan Cooperative Medical Science Program, Kofu, Japan, April 20-23, 1992.
Invited Speaker, American Society for Microbiology Annual Meeting, Symposium on Hepatitis Viruses A-F, New Orleans, LA, May 26-30, 1992.
Invited Speaker and Recipient, Hans Popper Prize, Biennial Meeting of the International Association for the Study of the Liver, Brighton, England, June 3-6, 1992.
Co-organizer, Chairman and Invited Speaker, Fourth International Symposium on Hepatitis Delta Virus and Liver Disease, Rhodes, Greece, June 8-10, 1992.
Invited Speaker, International Symposium on Hepatitis A Virus Vaccine, Rhodes, Greece, June 10, 1992.
Invited Speaker, Giornate Internazionali Di Aggiornamento Sull'epatite Virale, Genova, Italy, October 8-9, 1992.
Invited Speaker, State-of-the-art lecture (Hepatitis C and E viruses: prospect for controls) American Association for the Study of Liver Diseases Annual Meeting, Chicago, Illinois, November 2, 1992.

1993

Invited Speaker, International Symposium on Hepatitis C Virus, Tokyo, Japan, May 7-9, 1993.
Co-organizer, Chairman and Invited Speaker, VIII Triennial International Symposium on Viral Hepatitis and Liver Disease, Tokyo, Japan, May 10-14, 1993.
Invited Speaker, FEMS Symposium on the Hepatitis C Virus and its Infection, Istanbul, Turkey, June 29-July 1, 1993.
Invited Workshop Chairman, IX International Congress of Virology, Glasgow, Scotland, August 8-13, 1993.
Invited Speaker, Current Status of Hepatitis C virus research, Medimmune, Inc., Gaithersburg, Maryland, September 8, 1993.
Invited Speaker and Participant, 104th Ross Conference on Pediatric Research, San Diego, California, September 18-21, 1993.
Invited Speaker, National Academy of Sciences Colloquium on Changes in Human Ecology and Behavior: Effects on Infectious Diseases, Washington D.C., September 27-28, 1993.

8/14/06

Invited Speaker and Participant, 20th Anniversary of AUSRIA Symposium, Abbott Laboratories, Abbott Park, Illinois, November 1-2, 1993.

Invited Speaker, Symposium on Viral Safety of Plasma-derived Replacement Factors for Hemophilia: How Safe is Safe?, Armour Pharmaceutical Company, 35th Annual Meeting of the American Society of Hematology, St. Louis, Missouri, December 3, 1993.

1994

Organizer and Speaker (Annual Meeting), and Chairman, U.S. Delegation of the Hepatitis Panel, U.S.- Japan Cooperative Medical Science Program, Bethesda, Maryland, February 11, 1994.

Invited Speaker and Consultant, 7th Immunostudy Update (sponsored by ImmunoAg, Vienna, Austria), St. Thomas, U.S. Virgin Islands, March 14-16, 1994.

Invited Member, Scientific Advisory Committee to the Southwest Foundation, San Antonio, Texas, April 5-6, 1994.

Participant, *Flaviviridae* Taxonomy Committee meeting held in conjunction with 2nd International Meeting on Hepatitis C Virus and Related Viruses, San Diego, CA, July 31-August 6, 1994.

Invited Participant, ceremony in conjunction with awarding of the European Prix Galien to SmithKline Beecham Pharmaceutical Company for development of the hepatitis A vaccine, Berlin, Germany, September 30, 1994.

Invited Speaker, 34th Interscience Conference on Antimicrobial Agents and Chemotherapy, Orlando, Florida, October 4-7, 1994.

Co-organizer and Invited Speaker, The 25th International Symposium of the Princess Takamatsu Cancer Research Fund, Tokyo, Japan, November 14-17, 1994.

1995

Organizer and Speaker (Annual Meeting) and Chairman, U.S. Delegation of the Hepatitis Panel, U.S.-Japan Cooperative Medical Science Program, Tokyo, Japan, January 22-24, 1995.

Invited Speaker, Symposium on Hepatitis A: Biology, Epidemiology and Prevention, USUHS, Bethesda, Maryland, May 23, 1995.

Invited Speaker and Chairman, Fifth International Symposium on Hepatitis Delta Virus and Liver Disease, 3rd International Meeting on Hepatitis C Virus and Related Viruses (Molecular Virology and Pathogenesis), Brisbane, Australia, August 28-September 3, 1995.

Invited Speaker, International Symposium on Enterically-Transmitted Hepatitis Viruses, Paris, France, October 16-17, 1995.

Invited Speaker, Basel Liver Week 1995, Basel, Switzerland, October 17-23, 1995.

1996

Organizer and Speaker (Annual Meeting) and Chairman, U.S. Delegation of the Hepatitis Panel, U.S.-Japan Cooperative Medical Science Program, Kona, Hawaii, January 17-18, 1996.

Co-organizer and Invited Speaker, 1996 Keystone Symposia on Molecular and Cellular Biology conference on Hepatitis C and Beyond, Burlington, Vermont, January 23-29, 1996.

Invited Speaker, Hans Popper Hepatopathology Society Meeting, Washington, DC, March 24, 1996.

Co-organizer and Invited Speaker, IX Triennial International Symposium on Viral Hepatitis and Liver Disease, Rome, Italy, April 21-25, 1996.

8/14/06

Invited Participant, American Society for Virology 15th Annual Meeting, London, Ontario, Canada, July 13-17, 1996.

Invited Speaker, Hepatology Update 1996 (Festschrift for Dr. Fenton Schaffner), New York City, New York, October 24, 1996.

1997

Invited Participant and Speaker, US-Egyptian Study of Viral Hepatitis, Cairo, Egypt, February 19-25, 1997.

Member of Organizing Committee and Participant, Fourth International Meeting on Hepatitis C Virus and Related Viruses, Kyoto, Japan, March 6-10, 1997.

Invited Speaker, NIH Consensus Development Conference on Management of Hepatitis C, Bethesda, Maryland, March 24-26, 1997.

Invited Speaker, Gastroenterology in the Centennial Year... and Beyond, American Gastroenterological Association postgraduate course, Washington, DC, May 10-11, 1997.

Invited Chairman and Participant, Chronic Viral Hepatitis: Emerging Issues and Research Directions, American Association for the Study of Liver Diseases Single Topic Symposium, Tysons Corner, Virginia, June 27-28, 1997.

Invited Organizer and Speaker, Symposium on Viral Hepatitis. Mechanisms of Chronicity and Disease Progression, held in conjunction with the Second International Meeting on Therapy and Liver Diseases, Barcelona, Spain, September 17-19, 1997

Invited Speaker, International Symposium on Viral Hepatitis, Warsaw, Poland, Oct. 24-25, 1997.

1998

Invited Participant and Speaker, U.S.-Egyptian Study of Viral Hepatitis, Luxor, Egypt, March 23, 1998

Invited Chairman and participant, WHO technical consultation on Hepatitis meeting, Geneva, Switzerland, April 25-30, 1998.

Invited Speaker, Nobel symposium "Intracellular & Persistent Infection," Stockholm, Sweden, June 6-10, 1998.

Invited participant, Fifth International Meeting on Hepatitis C Virus and Related Viruses, Venice, Italy, June 25-28, 1998.

Invited Speaker, SmithKline Beecham Biologicals First Extramural R&D Symposium, Brussels, Belgium, September 29-30, 1998.

Invited Speaker, General Meeting of the Japan Society of Hepatology, Kanazawa, Japan, October 16-17, 1998.

1999

Invited Participant and Speaker, U.S.-Egyptian Study of Viral Hepatitis, Aswan, Egypt, February 20-21, 1999.

Invited Speaker, Abbott Laboratories Distinguished Speaker Series, North Chicago, Illinois, May 21, 1999.

Invited Speaker, 99th General Meeting, American Society for Microbiology, Chicago, Illinois, May 30-June 3, 1999.

8/14/06

Co-organizer, Sixth International Symposium on HCV and Related Viruses, Bethesda, Maryland, June 6-9, 1999.

Invited Speaker, Annual Conference of the Association of Practitioners in Infection Control, Baltimore, Maryland, June 21, 1999.

Invited Speaker, Second International meeting on Scientific Research Towards the Third Millennium, Piso Foundation, Cagliari, Sardinia, Italy, October 8-9, 1999.

Invited Speaker, Annual Meeting of the Infectious Diseases Society of America, Philadelphia, Pennsylvania, November 18-21, 1999.

Invited Participant, Annual Meeting of the American Society of Tropical Medicine and Hygiene, Washington, DC, November 28-December 2, 1999.

2000

Invited Participant and Speaker, U.S.-Egyptian Study of Viral Hepatitis, Sharm el-Sheikh, Egypt, February 26-28, 2000.

Organizer and Invited Speaker, Tenth International Symposium on Viral Hepatitis and Liver Disease, Atlanta, Georgia, April 9-13, 2000.

Invited Speaker, Eleventh Virology Symposium, University of Pittsburgh, Pittsburgh, Pennsylvania, May 23, 2000.

Invited Speaker, Annual Meeting of the Infectious Diseases Society of America, New Orleans, Louisiana, September 7-10, 2000.

Invited Speaker, 51st Annual Meeting American Association for the Study of Liver Diseases (AASLD) and Postgraduate Course, Dallas, Texas, October 27-31, 2000.

2001

Invited Participant and Speaker, US-Egyptian Study of Viral Hepatitis, Alexandria, Egypt, March 24-25, 2001.

Invited Speaker, AASLD Hepatitis Single Topic Conference on New Therapeutic Strategies for Hepatitis C, Chicago, Illinois, June 15-16, 2001.

Invited Chair and Speaker, Annual Meeting of the American Society of Tropical Medicine and Hygiene, Atlanta, Georgia, November 11-15, 2001.

2002

Invited Participant and Speaker, US-Egyptian Study of Viral Hepatitis, Cairo, Egypt, March 6-7, 2002.

Invited Participant and Chair, 9th International Meeting on HCV and Related Viruses, La Jolla, California, July 7-11, 2002.

Invited Lecturer on Hepatitis Viruses, Graduate Virology Course, University of Maryland School of Medicine, Baltimore, Maryland, Sept. 27, 2002.

Invited Participant, NIH Science Festival, Bethesda, Maryland, Oct. 16-17, 2002.

Invited Speaker, Symposium on Hepatitis A to Z, 40th Annual Meeting of Infectious Diseases Society of America, Chicago, Illinois, Oct. 24-27, 2002.

8/14/06

Invited Speaker: Leon Schiff State-of-the-Art Lecture, 53rd Annual Meeting, American Association for the Study of Liver Diseases, Boston, Massachusetts, Nov. 1-5, 2002.

2003

Invited Speaker, Symposium on "Hepatitis A to E and Beyond," The Royal Society of Medicine, London, England, Feb. 26-27, 2003.

Invited Organizer and Speaker, 11th International Symposium on Viral Hepatitis and Liver Disease, Sydney, Australia, April 6-10, 2003.

Invited Chair, Symposium on State-of-the-Art of Hepatology: Molecular and Cell Biology, 12th Falk Liver Week, Freiburg, Germany, Oct. 15-22, 2003.

Invited Participant and Speaker, 10th International Meeting on HCV and Related Viruses, Kyoto, Japan, Dec. 2-6, 2003.

2004

Invited Speaker, NIH Lecture Series "Demystifying Medicine," Bethesda, Maryland, Jan. 6, 2004.

Invited Speaker and Participant, 6th Annual US-Egyptian Study of Viral Hepatitis, Cairo, Egypt, Mar. 2-3, 2004.

Invited Speaker, Symposium on Vaccines in honor of Professor Ruth Nussenzweig, New York City, New York, Mar. 22-23, 2004.

Invited Speaker, Symposium on Chimpanzees in Biomedical Research, Bastrop, Texas, May 3-4, 2004.

Invited Speaker, Johns Hopkins-Australia Liver Diseases Conference, Bethesda, Maryland, Sept. 15, 2004.

2005

Invited Speaker, NIAID Workshop on Vaccines for HCV, Bethesda, MD, Feb. 1-2, 2005.

Invited Speaker and Participant, Indo-US Science and Technology Forum on Hepatitis E Virus, New Delhi India, Feb. 18-19, 2005.

Invited Keynote Speaker, International Conference on Emerging Diseases, Al-Ain, United Arab Emirates, Feb. 26-Mar. 1, 2005.

Invited Speaker and Participant, Seventh Annual US-Egyptian Study of Viral Hepatitis, Cairo Egypt, Mar. 2-3, 2005.

Invited Keynote Speaker, Australian Centre for HIV and Hepatitis Virology Research, 2nd National Scientific Workshop, Terrigal, Aust., May 4-6, 2005.

Invited Speaker and Participant, Cornell University Center for the Study of Hepatitis C, Symposium on Hepatitis C Immunobiology, New York City, NY, June 29-July 1, 2005.

American Society for Microbiology 45th Interscience Congress on Antimicrobial Agents and Chemotherapy Symposium on Viral Hepatitis, New Orleans, LA, Sept. 21-24, 2005.

8/14/06

Invited Co-Chair, Symposium on Hepatitis E Virus (HEV): Global Burden of Disease and Recent Vaccine Trials With a Recombinant HEV Protein, Washington, DC, Dec. 11-15, 2005.

8/14/06

Partial List of Post-Doctoral Fellows and Senior Scientists Supervised by Dr. Robert H. Purcell

Allander, Tobias
Baroudy, Bahige M.
Bukh, Jens
Chen, Ding-Shinn
Chen, Hong-Shu
Chung, Cathie T.
Cohen, Jeffrey I.
Dienes, Hans P.
Dienstag, Jules L.
Farci, Patrizia
Feinstone, Stephen M.
Forns, Xavier
Girones, Rosina
Gust, Ian
Gold, Jon W.
Hansson, Bengt G.
He, Le-Fang
Hess, George
Hill, David A.
Hirsch, Vanessa M.
Johnson, Philip
Johnson, Rodney
Kabrane-Lazizi, Yamina
Kamimura, Tom
Kaneko, Shuichi
Karron, Ruth A.
Kew, Michael
Kiyosawa, Kendo
Koshy, Rajen
Lander, Jerry J.
Langley, Raymond
Lee, Jae Woo
Mathiesen, Lars R.
McAuliffe, Vincent J.
Meunier Jean-Christophe
Miller, Roger H.

Moritsugu, Yasuo
Nam, Jae Hwan
Ogata, Norio
Olmsted, Robert
Peterson, John M.
Rizzetto, Mario
Romeo, Rafaella
Sakai, Akito
Schofield, Darren J.
Schultheiss, Tina
Shimizu, Yohko K.
Shimoda, Atsushi
Shiraishi, Hiro
Stewart, Deneen R.
Sugata, Fumihiko
Takikawa, Shingo
Tassopoulos, Nickolaos
Tellier, Raymond
Ticehurst, John R.
Tsarev, Sergei A.
Weitz, Manfred
Wen, Yu-mei
Yanagi, Masayuki
Yin, Shu-Rong
Yu, Minshu
Zhang, Mingdong

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- 1970
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